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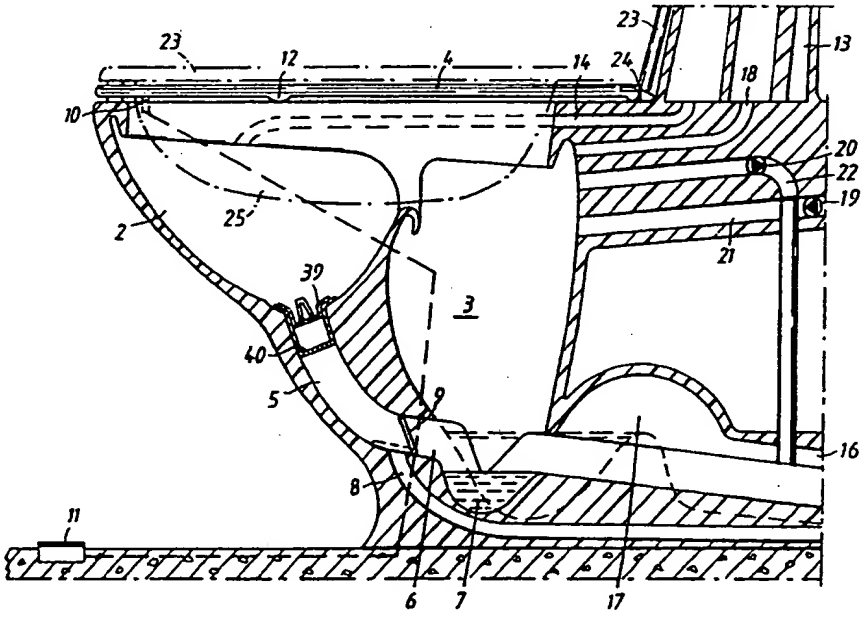

(57) Abstract

A toilet- and hygiene equipment comprises individual collection bowls (2, 3) for urine and feces, respectively. These collection bowls are disposed under a common seat (4) so that a person after having moved himself may use these collection bowls one after the other. In order to permit saving of urine the collection bowl (2) for urine has an outlet conduit (5) of its own which is separate from the outlet conduit from the collection bowl for feces and is connectable to e.g. a transport vessel. It is preferred that the collection bowl (2) for urine is in communication with two outlet conduits (6, 8) of which at least one may be shut-off by means of a shut-off device (9), so that urine may reach a storing vessel, in one position of the shut-off device, whereas urine residuals and a small amount of flushing water may reach a drain or the like, in the other position of the shut-off device. The shut-off device may be controlled by means of special transmitters (4, 11) that may be activated by the person who is using the toilet.

Toilet- and hygiene equipment

This invention relates to a toilet- and hygiene equipment.

The object of the invention has been to provide an equipment which meets the human toilet- and/or hygiene demands in an inobjectable manner with respect to the environmental requirements.

More specifically, the invention has for its object to decrease the demand on water, paper and the like in connection with toilet visits, at the same time as the wastes may be utilized for fertilizing, composting and the like.

To realize the above and other objects the invention has got the characterizing features as set forth in the claims.

The invention will be disclosed in more details below with reference to the accompanying drawings.

Figure 1 is a longitudinal section through a first equipment according to the invention, picked as an example;

Figure 2 i a longitudinal section through a second equipment according to the invention, picked as an example;

Figure 3 shows the equipment of figure 2, seen from above, but with the lid and a support ring removed;

Figure 4 shows the equipment in figure 2 in a frontal view.

As shown in the drawings the equipment in the emobdiment according to figure 1 consists of a slightly modified toilet bowl, which has been generally denoted 1 in the drawing. As contrasted to conventional toilet bowls, the toilet bowl according to the invention comprises two individual collecting bowls 2 and 3, respectively, disposed one behind the other, from which the foremost bowl 2 is adapted for collection of urine whereas the rearmost one 3 is adapted for collection of feces.

According to the invention the toilet bowl is designed in such a manner that a person sitting on the support ring 4 in a first, foremost position may utilize the foremost portion of the toilet bowl, i.e. uecesrinate, and in a second position, more rearwardly of the bowl, may utilize the rearmost portion thereof, wherein fececeses are collected. Thus, it is possible to bring about the desired separation of urine and feces by a simple sliding movement.

To permit saving of urine the urine collecting bowl 2 in this first embodiment is provided with an outlet conduit 5 of its own, which, via a water trap may pass to an own storing tank (not shown) of any desired type for storing of a urine/-flushing water mixture so that the urine/flushing water mixture may be stored and may be made useful.

In the embodiment in figure 5, the urine collecting bowl 2 similarly has its outlet into an otlet conduit 5 of its own, which conduit in turn is connected on one hand to a first outlet conduit 6 that, via a water trap 7, can lead to either a municipal sewer conduit or be led away to e.g. a garden plant, and, on the other hand, a second outlet conduit 8, that leads to a collecting vessel (not shown) which preferably has the shape of a transport vessel that may be picked up by an urine user to be utilized as a fertilizer, for instance.

In this embodiment a shut-off device 9 is provided between the conduits 6 and 8, and this device is adapted to permit that the flow of urine or urine with flush water, respectively, may be passed into different outlet conduits. This shut-off device, which of course may take any desired shape, is shown in the drawing as having the shape of a flap which is shiftable from an operative position, shown in full lines, to an inoperative position, shown in dashed lines. According to the invention this shifting is preferably brought about after an impulse from two different transmitters 10 and 11, respectively. Thereby, the first mentioned transmitter is preferably arranged at the uppermost portion of the toilet bowl, adjacent the foremost edge thereof, whereas the second one is disposed at the floor, in front of the toilet bowl and at a distance that corresponds to the distance between a man, who is urinating, and the collecting bowl 2 wherein the urine is intended to be collected.

Preferably, the support ring 4 is arranged tiltable, e.g. in that it rests on downwardly protruding, rounded fulcrums 12, disposed between the foremost and rearmost portions of the support ring, but normally the support ring by means of a spring biased member is held in such a position that the transmitter 10 is maintained inactivated. However, as one sits down on the support ring and rests on the foremost portion thereof, the support ring will tilt slightly counter clockwise

in relation to the fulcrums 12. Thereby, the transmitter 10, which may consist of a microswitch or the like, is activated and the transmitter transmits an impulse to a relay, a magnet valve or the like which moves the shut-off member to its inactive, dashed position in which it permits free communication between the collecting bowl 2 and the outlet conduit 8. Therefore, the urine will be led directly to the above mentioned transport vessel. The condition will be the same if one stands on the floor in a manner to activate the transmitter 11.

When one slides rearwardly on the support ring and the centre of gravity is consequently displaced to the other side of the fulcrums 12, the support ring 4 tilts up clock wise, whereby the shut-off means 9 returns to its active position, closing the conduit 8. Therefore, in this position the shut-off means prevents communication between the collecting bowl 2 and the outlet conduit 8.

It will be realized that it is possible, by the described arrangement, to collect nearly pure urine in a storing vessel or the like, which urine keeps almost entirely odor free for a long period of time, because it does not come into contact with the bacteria of the water and/or the air.

By permitting a restricted amount of water from the water reservoir 13 of the toilet (such as e.g. about 2 dl per flushing operation) to reach the collecting bowl 2 via a conduit 14 it is achieved that this very restricted flushing water amount and residual urine in the bowl 2 and the conduit 5 reach the conduit 6 and thus the above mentioned outlet or withdrawal point. In this way the bowl 2 is always maintained clean, at the same time as the amount of flushing water is held at a minimum.

Since one is now straigt above the bowl 3 the feces will go down thereinto, and by means of an essentially conventional flushing device these feces along with flushing water will leave through a conduit 16, provided with a water trap 17. The flushing water conduit has been denoted 18 in figure 2. Fans 19, 20 and conduits 21, 22, respectively, may be provided to vent off unpleasant odors and blow in fresh air.

The just described equipment may be varied in many different ways as to its individual details within the scope of

the appendant claims.

Thus, it may be conceived, for instance, to arrange the collecting bowls 2 and 3 one after the other sidewardly rather than one behind the other, in which case the bowl and the support ring have to be adapted therefore. It would also, of course, be possible to provide a conveyor for the feces to a special collection site, and it would thereby be possible, as with the urine, to provide one conduit that leads to this collection site, and another conduit, which passes the flushing water and remaining residues of feces to a conventional drainage. As with the urine collection bowl 2, which has a removable grid 39 and, if desired, also a fixed grid 40, it would be possible to provide such grids also for the collection bowl for feces. Such grids have mainly the purpose of catching objects that are unintentionally dropped into the toilet. The shut-off means 9, like a possible shut-off device for feces, may of course be designed in any suitable manner, and the transmitters and the positioning thereof may be varied in a plurality of ways.

Claims

1. A toilet- and hygiene equipment, comprising individual collecting bowls (2, 3) for urine and feces, disposed under a common seat (4), one after the other, so that a person sitting on the seat by movement may reach either one of the bowls, **characterized in** that each one of the collection bowls (2,3) has individual outlet conduits (5, 5,6,7) of its own, from which the conduit passing from the collection bowl (2) for urine is connectable to a storing vessel or the like for an urine/flushing water mixture, whereas the conduit (5, 6, 7) from the collection bowl for feces is adapted in conventional manner to be connected to a fixed drainage (figure 1).

2. A toilet- and hygiene equipment according to claim 1, **characterized in** that the collection bowl (2) for urine is connected on one hand to a first conduit (8) that leads to a transport vessel, and on the other hand to a second conduit (6) that passes to a drain, and in that at least the conduit (8) to the transport vessel is closable by means of a shut-off device (9) that is controlable at will.

3. A toilet- and hygiene equipment according to claim 1 or claim 2, **characterized in** that a flushing water conduit (14) with a restricted water flow is connected to the collection bowl for urine.

4. A toilet- and hygiene equipment as claimed in one of claims 1 - 3, **characterized in** that a transmitter (11), disposed on the floor, is adapted to become operative as it is subjected to the weight of a person standing at a predetermined distance in front of the toilet, whereas the second transmitter (12) is adapted to be made operative by a person sitting on one portion of the toilet seat, preferably the foremost portion thereof.

5. A toilet- and hygiene equipment as claimed in one of claims 2 - 4, **characterized in** that the toilet seat (5) is adapted to be tiltable, e.g. in that it rests on fulcrum means (12), disposed between the front and rear edges of the seat and in that it is normally held in a position slightly tilted upwardly by means of spring biased member.

AMENDED CLAIMS

[received by the International Bureau on 25 September 1992 (25.09.92); original claims 1-5 replaced by amended claims 1-5 (1 page)]

1. A toilet- and hygiene equipment, comprising individual collecting bowls (2, 3) for urine and feces, disposed under a common seat (4), one after the other, so that a person sitting on the seat by movement may reach either one of the bowls, **characterized in** that each one of the collection bowls (2,3) has individual outlet conduits (5,6, 16) of its own, from which the conduit (5,6) passing from the collection bowl (2) for urine is connected on one hand to a first conduit (8) that leads to a storing container, a transport vessel or the like, and on the other hand to a second conduit (5,6) that passes to a drain, whereas the conduit (16) from the collection bowl for feces is adapted in conventional manner to be connected to a fixed drainage, preferably through a water trap (17), and in that at least the conduit (8) to the transport vessel is closable by means of a shut-off device (9) that is controllable at will.

2. A toilet- and hygiene equipment as claimed in claim 1, **characterized in** that the second conduit (5, 6) that passes to a drain, is provided with a water trap (7).

3. A toilet- and hygiene equipment according to claim 1, **characterized in** that a flushing water conduit (14) with a restricted water flow is connected to the collection bowl (2) for urine.

4. A toilet- and hygiene equipment as claimed in one of claims 1 - 3, **characterized in** that a transmitter (11), disposed on the floor, is adapted to become operative as it is subjected to the weight of a person standing at a predetermined distance in front of the toilet, whereas the second transmitter (12) is adapted to be made operative by a person sitting on one portion of the toilet seat, preferably the foremost portion thereof.

5. A toilet- and hygiene equipment as claimed in one of claims 2 - 4, **characterized in** that the toilet seat (5) is adapted to be tiltable, e.g. in that it rests on fulcrum means (12), disposed between the front and rear edges of the seat and in that it is normally held in a position slightly tilted upwardly by means of spring biased member.

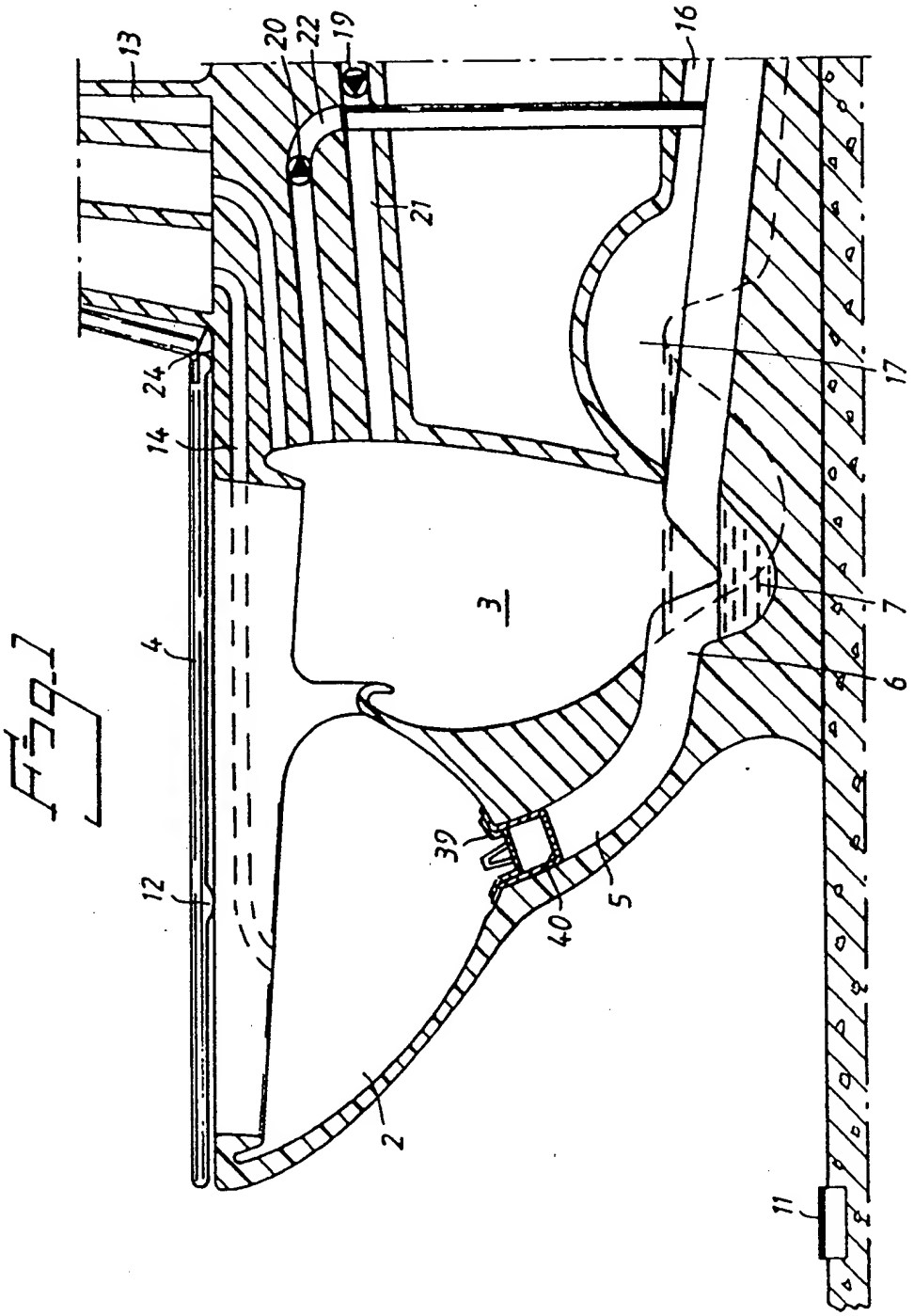

Fig 1

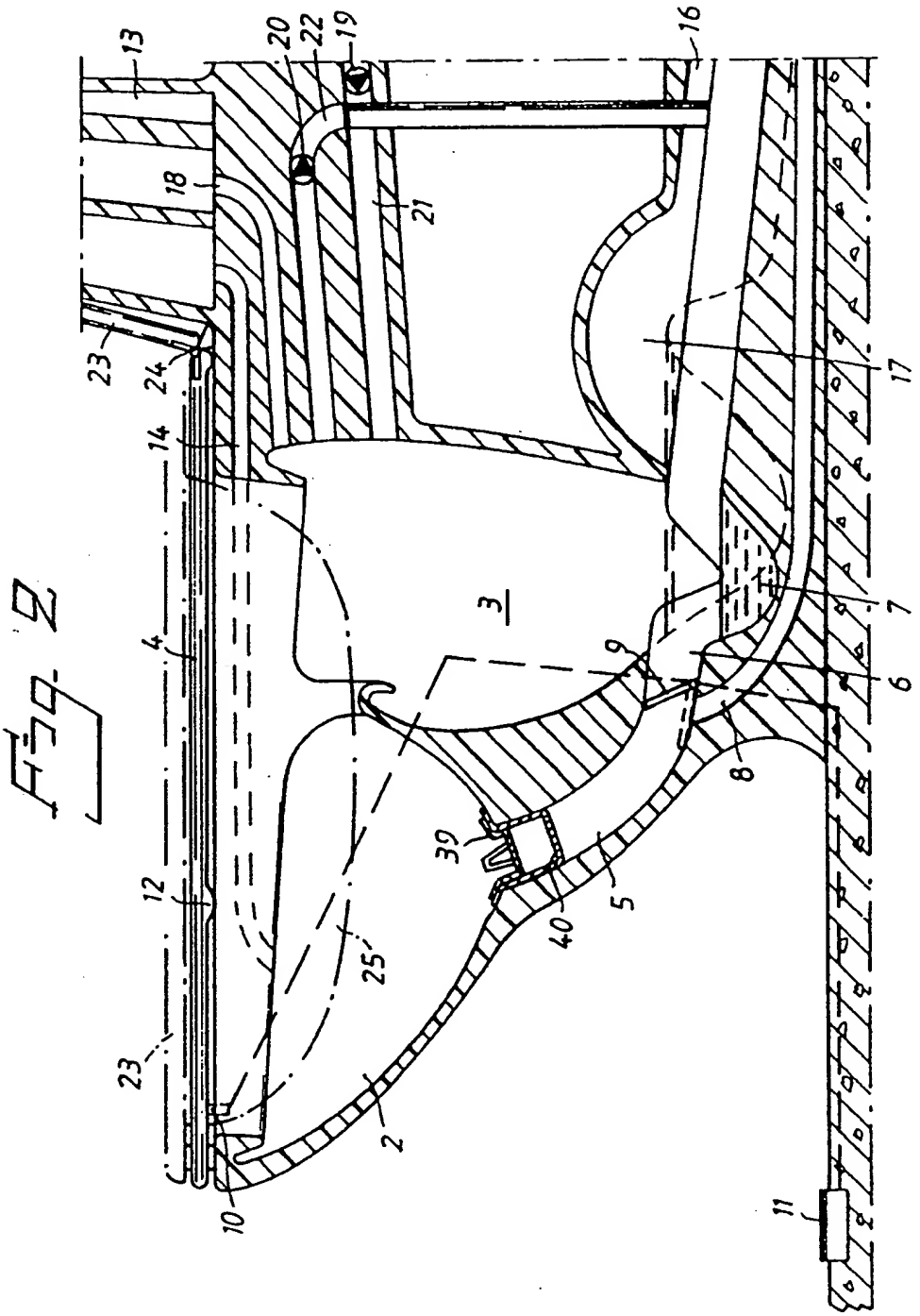

Fig 2

Fig. 3

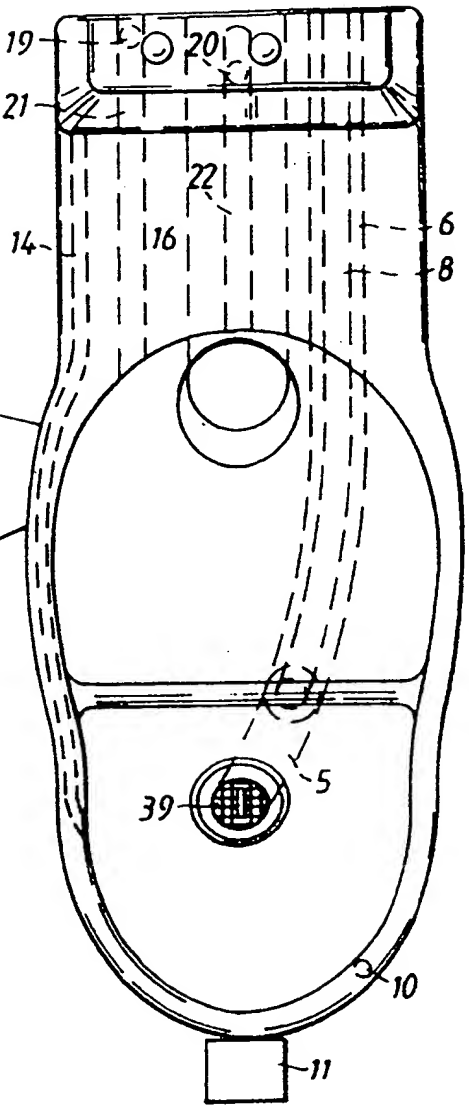

Fig. 4